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ABSTRACT

A brief overview of Alvin Toffler's "waves" explanation of history (agricultural, industrial, and post-industrial) introduces reflections on future educational practices. While the limitations of the typical American home once made it imperative that education occur in centralized places, societal changes, as well as the development of individual learning tools such as television, computers, and learning discs, point toward a future in which the home may become a mainstream location for education. Placing education outside the schools--in homes, in neighborhood centers, and in community businesses and agencies--will change the nature of schools. However, there will continue to be many educational activities within the schools. Students will go there for specific purposes, and educational personnel will operate out of the schools. They will interact through technology with their students elsewhere and use the schools as bases from which to work with students of all ages. Schools will become centers for community educative activities, not only during the traditional times and months of schooling, but also in evenings and during the summer. The varied roles and opportunities of educators are considered. (JD)

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INVENTING THE FUTURE: OPTIONS AND STRATEGIES FOR EDUCATORS

A Presentation Made at the 1984 Annual Meeting of the American Association of Colleges for Teacher Education, San Antonio, Texas, February 1984

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INVENTING THE FUTURE: OPTIONS AND STRATEGIES FOR EDUCATORS

Introduction

This paper provides an overview of alternative futurism and implications and applications in grades Nursery-12, and then lays out some considerations for education personnel development (primarily teacher education, and secondarily the preparation of administrators and other kinds of personnel). An effort will b made to emphasize Alvin Toffler's concept of the "electronic cottage" as it applies to education. Since this paper has been prepared as a handout for a conference presentation that includes "hands-on" experiences and presenters-participants interaction, it will provide the essence of the topic but not a comprehensive view of it.

What is alternative futurism? What are its broad relationships to education?

The basic concept of this paper is that it is possible to study the lessons of the past and of the present and then to make sensible, flexible forecasts about likely conditions and developments in both the near and far-distant future. While it is not possible to forecast with total accuracy what will be happening any time beyond the moment or any subsequent time period, it is possible only to determine general directions. The art and science of forecasting are sufficiently sound to say that it is better to make plans on the basis of futuristics than on a fatalistic attitude of "what will be will be."

There is no such thing as futurism, for that implies a greater certainty than is justified. Rather there is alternative futurism, which recognizes the fact that it is possible to infer a series of events and conditions within some range of probability. There are too many variables in events and conditions to forecast with total precision, with a specific timeline for occurence. Total precision is not necessary in planning for institutions, agencies, organizations, and enterprises. With the relative freedom and openness of our democratic society, it is possible to study systematically probable developments and conditions and take one or more actions based on relative precision of forecasts:

1. Acceptance of the forecast as basically desirable and development of rational, feasible, and desired plans which prepare for the probable event or condition.

2. Acceptance of the forecast as desirable to a degree and action steps to make sure that the probable event or condition will be adapted suitably for democratic, economic, political, or other criteria. Some of the forecasts can be anticipated positively, and aspects can be blocked or redirected where there are undesirable characteristics.

3. Rejection of the forecast for one or more reasons and actions to assure that the projected event or condition does not occur.

In a democratic society there is opportunity to debate advantages and disadvantages of forecasts. Then action can be taken to assure that one of the above alternatives is selected. Futurists commonly believe that it is possible

to affect events and conditions that are likely to occur with the short time span of five years. If our schools adequately teach democratic decision-making and provide years of practice and if the larger society maintains an open forum for free discussions, adults should be able to study alternatives and take sensible actions to produce desired events or conditions within a five-year period.

Once specific goals have been determined for specified time periods, planners can then use traditional approaches in developing objectives, planning for appropriate organization, allocating resources, and the like. Since the world is a changing, dynamic place, all plans are subject to updating. Monitoring present events and conditions and revising futuristic forecasts are a continuing responsibility for decisionmakers. They should not be trapped by either of the following:

1. They who do not know history are bound to repeat its irrelevancies and mistakes.

2. They who do not know about the future are bound to be shocked by it--the concept made popular by Alvin Toffler in his Future Shock.

They who forecast wisely are likely to be both responsive and responsible for their constitutents and for the larger society and world. Decisionmakers must be as well informed as anyone and better than most. This holds particularly true in the social sciences, education for example, where the number of variables is astounding and where consequences of actions are long term. Capable decisionmaking comes through a lifetime of growth. Alternative futurism is a critical component of lifelong professional development on two counts: (a) It provides specific ideas and information. (b) It stimulates the mind and sensitizes the spirit to make them more open to growth and to diverse kinds of thinking and feeling. Decisionmakers have the tremendous task of bridging past, present, and future within the context of democracy, human worth and dignity, economic efficiency, political possibilities, and so forth. The task is mindboggling. Increasingly decisionmakers have to be generalists--in many disciplines' ways of knowing and acting--and specialists--in the ways diagnosing and prescribing services and actions for particular constituents, through the means of a particular specialty.

A concept which is helpful to those seeking to bridge past, present, and future is Alvin Toffler's "waves" explanation of history. While the Third Wave is the most pertinent to this discussion, let us first briefly explain the preceding two.

The First Wave. The First Wave was agricultural. Life was simple 8,000 years ago. By then humanity largely had ceased its nomadic wandering and had become farmers. Large families were desirable to provide labor for the many chores. Children learned how to be productive men and women by working with fathers and mothers, relatives, and neighbors. Communications were face to face. Those affected by decisions helped to make them. Social controls were direct and immediate. Every one knew who was who, what was what; everyone knew how tasks were to be done and when to do them. Education and other aspects of socialization were simple, direct, understandable, and effective.

The Second Wave. For the past 300 years the Western World has been in its industrial age--The Second Wave. This is the age that we have passed through in the United States, and it is the one of which we are still a part. We are in a transition phase. Rather than working in the home, in the family shop, or in the fields, adults left their homes to large centralized factories and offices. Even agriculture became an industrial-type operation. The economy became production centered. Specialization abounded. Efficiency was defined in terms of productivity and cost. Large concentrations of people gathered where work was--this became an operational definition of a city. Large groups of children forced a change in how education was organized. The industrial, military model for large-scale operations was applied to education. Schools were organized like factories, and they were thought to be solid preparation for the real world of work and citizenship.

As a carryover of the Second Wave, schools were organized on a false assumption: that it is necessary to physically convene tens of millions of elementary and secondary students daily to provide instruction. In the past it was necessary to use this approach to instruction, for teachers were the only means of transmitting limited knowledge in scarce books. Physical proximity was necessary not only to deliver the instruction but also to assess students' learning. For many years this system was practical and sensible.

The accumulated undesirable consequences of the model which has brought people together for decades for instruction now justify a major change. First, the centralization of persons in concentrated areas for the purpose of schooling has created a number of negative factors. The placement of from 200 to several thousand students in one location results in the kind of discipline problems we note regularly. The concentration of large numbers of social, racial, and ethnic groups results in expressions of negative feelings. Neighborhoods (lawns, streets, and businesses) suffer from the influx of large numbers of persons. Even traffic patterns, pollution, and parking become problematic. Collectively, the consequences of large schools have diverted our attention from the instructional mission to the schools' role in solving social problems.

While these conditions call for increased interaction and trust among all persons involved, the educational organization has become too large. Student-teacher relations are depersonalized, specialization has increased to the point that teachers do not know individual students well, and counseling efforts have focused upon mass testing and group advisement. In fact none of the staff knows very many students. Nor do they know their colleagues. Consequently individual teachers work in isolation, lacking a support system. They also lack team approaches to diagnosing and prescribing instruction for individual students. School personnel have been driven from a life of family and community to an education factory where the output is judged by standardized test scores.

Schools' sheer size has made them extremely complex business operations. In almost every community in America schools are the largest business. They build, maintain, and insure physical facilities at enormous cost. The schools

in this country employ more personnel than any other industry.

The limitations of the typical American home once made it imperative that education occur in centralized places, particularly as the world moved into the complexities of the twentieth century. Whereas families once had been able to provide the relatively simple training for the roles of parent, citizen, and worker on site prior to this century, the rapid increase in knowledge and technology led to a reconceptualization of business and industry which in turn demanded a different kind of education. The prevailing attitudes toward business and industry were applied to the schools as a place to prepare workers for the economic system. Faced with such growth, change, and complexity, the home alone was unable to prepare children for the mass society that had arisen.

The Third Wave. The U.S. has become the world's first post-industrial nation--to use Daniel Bell's term. As the nation moved into a post-industrial socity, called by Toffler the "Third Wave," the picture in learning changed dramatically. Children spent 16,000 hours at home with television (in contrast to 12,000 with teachers). Millions of them acquired home computers. Tens of millions of calculators became commonplace in homes. Advances in printing technology produced a flood of materials. The jet plane took millions to distant places. Video disks brought entire libraries into homes. The emergence of the United States as a world super power, coupled with the ease of immediate access to world-wide information, allowed no one to live in Grandma Moses' type of village. Technology in the electronic cottage created a Third Wave school quite different from the past. Education reached a point where it could become spatially dispersed. In a learning society, education became the responsibility of many persons other than professional educators.

The rising level of education created a body of citizens quite capable of collaborating with schools. American citizens became more assertive in demanding their right to effective education. Not only were they more competent intellectually, but they were ready to become more active participants in the educational system. The stage was set for homes becoming centers for planned educational endeavors. Both the people and the technology were there.

The changing nature of work kept millions of people at home much or all of the time. The concept of flex-time made it possible for parents to stay at home when their children were engaged in learning activities. The number of part-time workers grew. Increasingly people opted for early retirement. The rise of entrepeneurship allowed many persons to work from their homes. The young people themselves were a resource for instruction. And finally, many large businesses allowed their employees to work in their homes much of the time. Improvements in communications made it possible for even those who are not working at home to supervise their children's learning activities at home.

Collectively, these circumstances are recreating the neighborhood in

which there are adults present at all times. Since learning can occur in the home and neighborhood at all hours, it is no longer limited to specific locations and times.

Designating the home as a mainstream location for education does not remove the responsibility for the management and funding of education from its traditional sources. The electronic cottage concept broadens the education arena and emphasizes education opportunity for all, at all times. If the public school systems do not provide technological aids for learning, we will be creating a new class of disadvantaged in America--those without learning technologies. Therefore the concept of lending library must be extended to make available to every home a portable learning carrel complete with interactive computer, telephone, and other instructional technology and materials. The effective utilization of this learning center is dependent upon collaboration between community adults and school people. Then we can become a learning society in which all persons are active participants as both teachers and learners.

What are some direct applications of alternative futurism in the schools?

Placing much education outside the schools--in the homes, in neighborhood centers, and in community businesses and agencies--will change the nature of schools. There will continue to be many educational activities within the schools. Students will go there for specific purposes at specified times. Educational personnel will operate out of schools. They will interact through technology with their students elsewhere, and they will use schools as home bases from which to go forth into the community to work with students of all ages. Schools will become centers for community educative activities not only during the daytime, during the traditional months of schooling. In addition they will be used during the four "S" times: sunrise, sunset, Saturday, and summertime.

School personnel will continue to assume primary responsibility for the how of education--diagnosing and prescribing and assessing. Importantly they will as a professional unit assist the community in determining the five "W" questions: why (goals and objectives), who (who shall be educated), when (ages to be served), where (sites for education), and what (the basic curricular decisions). Even with the concept of the electronic cottage more fully in place, the schools should continue to be busy places, productive centers for our learning society's most important function, its remaining "western frontier."

Major changes will affect the nature of the curriculum, whether taught directly within schools or throughout the community. They can be grouped into broad categories and used in developing personal files on futuristic developments:

1. Pragmatic and changing values will create the need for values education far beyond that needed now and will affect the total curriculum.
2. Difficulties for the practice of democracy will demand increasing attention to the question of how to teach the concept and to create a laboratory for its practice for all ages.
3. Relative absence of fear as a motivator and increased tendencies toward hedonism as the work ethic changes all will force a major change in motivational practices with students and significantly affect much of the school program.

4. Increasing cultural pluralism will both enrich the curriculum and add pressures to maintain ways that hold the nation together.
5. Population pressures around the world will affect world conditions and create demands for family planning; in the U.S. the changing distribution of the nature of the people (more minorities; more Spanish-speaking peoples) and the ages (more adults) will affect education support, programming, and so forth.
6. Use of organ replacements, preventative medicine, and better health care will change the distribution of the population and increase interests in recreation and health components of the education program.
7. Travel and communications capabilities will increasingly create a global village and change the way we look at the world and study it.
8. Energy availability will continue to change the nature of life and work in particular, with far-reaching implications for education.
9. Space and water explorations will open up whole new worlds to study, attitudes to learn, and products to use.
10. Technology will continue to alter the way we work, live, think, and value. Education should provide the means of maintaining our humanity, our sense of worth and dignity, and our altruistic motivations and practices.

The net consequences of the many changes which can be forecast are numerous and extensive. William C. Miller in The Third Wave and Education's Futures (Phi Delta Kappa Educational Foundation, Fastback #155, p.20) notes needed changes in education:

1. From:"mass teaching, single learnings, passive answer-absorbing, rigid daily programs, training in formal skills and knowledge, teacher initiative and direction, isolated content, memorized answers, and emphasis on textbooks."
2. To:"personalized teaching, multiple learnings, active answer-seeking, flexible schedules, building desirable attitudes and appreciations that stimulate a questing for knowledge, child initiative and group planning, interrelated content, problem awareness, use of media in addition to texts, and active stimulation of intellect."

This does not imply a rejection of all present approaches to schooling and to educating. The list does foretell major changes in curriculum, program organization, staffing patterns, evaluation, and much more. Present national studies seem to focus on doing better what we should no longer be doing or what we should be doing in smaller amounts or with different emphases. When the nation went into its post-industrial phase a quarter-century ago, it did not adequately commit itself to essential changes in the way it educates its young and adult citizens. The time is long past for greater assessment of needed changes and means of moving toward them.

Education Personnel: Something Old, Something New

Education personnel have learned much over the centuries about promoting learning. Alternative futurism's insights and concepts do not require a revolution in the way that school personnel are prepared; yet, major changes in emphases are imperative if those personnel are to be capable of being society's experts on diagnosing, prescribing, assessing, and improving learning for all ages, for all citizens. Enough is known about the art and science of education to permit change.

Educators should be exceptionally well prepared for their complex and diverse roles. They need to be emotionally and psychologically studied and helped to become mature, secure, and competent human beings. They need to have sound grounding in the many disciplines out of which education is developed. They need experiences in the arts to create exceptional sensitivity to the human condition and to the many different kinds of conditions which result from variables such as sex, age, race, ethnicity, nationality, religion, values, and socioeconomic class. They must know a broad range of subjects which are taught in education programs. They, in a word, must be specialists and generalists. They must be well educated now, and they must know how to continually renew their knowledge and competence during their lifetimes. They truly have to be renaissance people.

Specifically, educators must be prepared for the following kinds of roles. These roles have been inferred from a study of the kind of world which has emerged and is likely to emerge:

1. Values Developers: This is an important role, one of helping students to develop their own values for the present and as contitions and developments change with increasing complexity and speed.

2. Resource Finders: Individualized education both in school sites and elsewhere will become more common and feasible. Educators should beoome proficient in helping individuals find information when it is needed and in the form that facilitates learning.

3. Learning Diagnostician, Prescriber, and Outcome Assesser: Released from the drudgery of dispensing information and testing its memorization, educators should become true experts in diagnosing learning needs, prescribing tailored approaches to effective learning, assessing outcomes, and improving future learning prescriptions.

4. Interdisciplinary Learning Experts: The complexity of the world requires knowledge, insights, and competence from all the disciplines. Educators must be competent in helping learners master the ways of knowing of critical disciplines and of gaining access to the data bases of those disciplines.

5. Human Relations Developers: The complexity of domestic and international relations requires that all citizens master human relations, conflict resolution, and and communications skills. Educators must be experts in drawing from diversity to create an enriching education and in helping all people live together in peace and functional goodwill and cooperation.

6. Career and Leisure Counselors: Constant changes in career options and increased leisure necessitate education that helps individuals to take advantage of options and leisure. Meaningfulness in life must accompany increased lifespans. Educators have to be experts in helping all citizens to reach that point.

7. Community Learning Facilitators: As more learning occurs in the community at large, through technology and in various sites, students will need help in capitalizing on learning options. Further, community resources will have to brought into the schools. Educators must become experts in such utilization.

8. Profession Builders and Leaders: The complexity of the teaching, learning, and assessing role requires individuals who commit themselves to theory building, researching, and practicing the profession on a high level. That requires that in the schools and in education personnel preparation programs there will be adequate attention given to this critical professional role.

9. Utilizers of Futuristic Processes and Substance: Knowing of the great changes which will continue to unfold and alter the nature of the world and life in general, educators must become practicing futurists. They must learn the processes of futurism, its substance to be translated into education programs, and the attitudes and competence which promotes sensible utilization of alternative futurism in the totality of education.

Education in the past often was bound up in past and present. Visions of what can be are equally important ingredients in the educational program within the schools and whereever education occurs, and through whatever means, and for whomever. To some extent positive and realistic images of the future are self-fulfilling prophecies. Prophets have long known that a people without vision perish.

Educators have the opportunity of helping the society imagine its alternative futures and attain the best possible futures. Educators should become experts in helping the society invent the kind of futures that are compatible with our best democratic traditions of helping individuals become the kinds of people that are befitting our way of life.

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